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Land & Water

Kentucky Environmental and Public Protection Cabinet

Land Air & Water

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Grants promote cleanup projects and educate landowners about the environment

By Kim Richardson
Division of Conservation

The Kentucky Soil and Water Conservation Commission is gearing up for another round of environmental grants. Conservation districts from across the state have the opportunity to request money to help fund environmental projects in their area. Environmental grants are given to districts in order for them to educate the public about environmental problems. Once the public understands the problems then alternatives can be provided that help to alleviate them. A district can request up to \$7,500 to help introduce and encourage the adoption of new management practices.

Many projects have been funded with environmental grants. Such projects include scrap metal collection, tire cleanup and recycling, pesticide container recycling, erosion control projects, grazing conferences, solid waste pickup and one of the most popular—dead animal disposal.

The grants also encourage working with other agencies. Many projects could not get off the ground without the assistance of county government, city government, the Kentucky Department of Agriculture and cooperative extension services, just to name a few.

For example, the Fayette County Conservation District applied for an environmental grant that deals with nonpoint source pollution in urban and rural areas. The district is receiving assistance from the Friends of Wolf Run Inc., Lexington-Fayette Urban County Government, Kentucky Division of Water and bordering neighborhood associations. The grant will demonstrate and encourage the adoption of practices that reduce nonpoint source pollution from animal waste, chemicals, fertilizers and other pollutants from entering the waterway and improve stream water quality conditions.

The grant also seeks to establish permanent herbaceous vegetative barriers on the tributaries of the South Elkhorn Creek to reduce pollution inputs. Several landowners will be selected for assessment, design and installation of the stream bank stabilization and vegetative buffer zone. Once the designs have been installed, three field-day events will be held inviting neighboring landowners to see the projects in their beginning and finished stages and to educate them about the necessity and successful outcome of the projects. Soil, nutrient and water testing will be done to rate the environmental impact.

Conservation district use of environmental grants is making Kentucky communities cleaner and better educated about how pollution, garbage and carelessness can affect the state's water quality. To find out more about environmental grants, contact Steve Coleman at the Division of Conservation at (502) 573-3080.

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on the cover

There are more than 30 species of goldenrod in Kentucky. Unlike the White-haired goldenrod that is federally threatened and the Short's goldenrod that is federally endangered, this ridge contains Canada goldenrod (*Solidago canadensis*), a common species found throughout the state. Photographed by Cindy Schafer on the family farm in Owen County.



ABOVE: Jack Estep and Deanio Carmacal with the Division of Forestry prepare to use an insecticidal soap treatment to combat the woolly adelgid. Photo by Tim McClure



RIGHT: The Hemlock woolly adelgid creates and lives in white woolly masses on the underside of hemlock branches. There it feeds on the branches and eventually kills the tree within a few years. Photo provided by the Connecticut Agriculture Experiment Station

Evergreens threatened by Hemlock woolly adelgid

By Gwen Holt and Tim McClure
Division of Forestry

A winter walk through eastern Kentucky’s forests is uniquely rewarding, in part because of a tall, stately and vital evergreen that stands out against the winter landscape of Appalachia.

That evergreen, the hemlock, plays an important role for wildlife and ecological diversity. The tree, identifiable by two parallel white lines on the underside of the leaf, is found in cool, moist areas, typically on steep slopes and in shady ravines near streams and creeks. In winter, it can be easily spotted from northeastern to southeastern Kentucky.

Now imagine eastern Kentucky without hemlocks. It could happen, and that’s why the Kentucky Division of Forestry (KDF) is asking for your help.

The state’s forests are threatened by a number of insects and diseases. One pest, the Hemlock woolly adelgid, is of particular concern because it has recently been detected in a small stand of trees in Harlan County. It attacks hemlocks – only hemlocks – and kills them by literally sucking them dry. Once infested, a tree usually dies within a few years.

The adelgid, an aphid-like insect, has infested trees in Tennessee, Virginia and southern West Virginia. The Division of Forestry has continually conducted forest surveys for the last few years looking for this insect.

“We have been watching for this pest for several years and anticipated that it would be here soon,” KDF Director Leah MacSwords said. “We are very concerned about the impact this pest will have in our forests, especially in aquatic habitats.”

Dr. John Obrycki, state entomologist and chair of the University of Kentucky Department of Entomology, contacted the division in early April to report a suspected infestation in the Rebel Rock area of Harlan County, within about 1,000 feet of Kentenia State Forest.

Following the confirmation of the infestation, the division and the U.S. Forest Service took action quickly. Rusty Rhea, of the Forest Service out of Asheville, N.C., has been working with states to control this pest. Rhea traveled to Kentucky to assist in treatment options. He applied a soil injection treatment around the



KDF’s Lem Johnson sprays insecticidal soap on hemlocks in the Rebel Rock area of Harlan County.
Photo by Tim McClure

Continued on Page 4

Big move at Big Bone Creek

By Rosetta Fackler
Division of Water

Moving is never easy. New territory can be intimidating even if you weigh 2,000 pounds. Reluctance, bordering on contrariness, was evident when Project Manager/Park Naturalist John Barker and Herd Manager Wayne Ryan opened the gates to a whole new world for the bison herd at Big Bone Lick State Park.

Since the early 1990s the herd had grazed on 18 acres in the floodplain of Big Bone Creek in Boone County just outside Union. However, because the floodplain had inadequate pasture and because runoff of manure was a source of pathogens and nutrients in the creek, it was decided to move the herd to higher, greener pastures.

Through a cooperative effort of the Kentucky Department of Parks, the Boone County Conservation District and the Northern Kentucky University (NKU) Center for Applied Ecology, the water quality in Big Bone Creek will be improved.

“Having the herd in the floodplain is not good water quality management for Big Bone Creek,” said State Naturalist Carey Tichenor. “This is a stewardship issue,” he said, citing the benefit for both the creek and the herd.

“When those bison step out onto the clover pasture, it will be a dream come true,” said Barker, as he and Ryan watched the herd move toward the newly opened gate, retreat momentarily, then finally explore the new range.

In addition to moving the herd to more appropriate areas, other work has been conducted to address stream, habitat and riparian areas (vegetated areas bordering the stream). Scott Fennell, senior engineer at the NKU Center for Applied Ecology, identified areas of the watershed in need of streambank stabilization, designed the remediation measures and planned the replanting of native species in the floodplain and the riparian areas adjacent to Big Bone Creek, Gum Creek and other minor tributaries.

Beginning in 2004, a low bridge was removed. In addition, workers used vegetated soil wraps to restore 300 feet of streambank at the bridge site and vegetated riprap to restore 200 vertical feet of bank along an outside bend.

Phase I of the project was completed in 2005. A large woody debris jam was removed, an illegal dump was cleaned up, two pond dams were removed, 13 constructed riffles were installed and the stream was restored. In total, more than 10,000 feet of streambank was restored using bioengineering practices.

A major component of the streambank and floodplain restoration was the removal of more than 4,000 invasive bush honeysuckles. To date, approximately 3,700 native trees and shrubs have been planted in the riparian area, including American elm, black locust, sycamore, red maple, box elder, grey and silky dogwoods and wild plum. These species will help to stabilize the streambanks, restore native plant populations and create excellent wildlife habitat.

Moving away from the floodplain meant the herd was in

need of new water and feeding facilities. Mark Jacobs, of the Boone County Conservation District, developed the guidelines for best management practices appropriate to the size and needs of the herd. Using state cost share funds, fencing was installed to provide rotational grazing in five pastures containing warm or cool season grasses, and an appropriate setback was established from the creek and forested pasture area. Using standard weight-per-animal criteria, a heavy-use area was installed. Because access to surface water was protected with a fence and riparian zone, fresh water was piped into the alternative watering system from a nearby protected ephemeral stream. This pipe and tank system provides

“This is an excellent example of many people collaborating on a nonpoint source issue – forage, manure and streambank degradation.”

Scott Fennell, NKU Center for Applied Ecology



the herd with a continuous supply of water without the help of electricity.

With five pastures restored to native prairie grasses on 40 acres, the bison are assured of the kind of forage they would have enjoyed 100 years ago. All of these efforts will improve the health of the herd by eliminating contact with the soggy ground in the floodplain, thereby reducing the instances of hoof rot.

Phase I of the \$1 million-plus project affects 74 acres, and another 51 acres will be added before completion. In addition to state cost share dollars, funding was provided through the Northern Kentucky Stream Corridor Restoration Fund and the Department of Parks. The entire riparian area is now in a conservation easement, and the project budget includes maintenance and monitoring for 10 more years.

Smiling, Fennell said, “This is an excellent example of many people collaborating on a nonpoint source issue— forage, manure and streambank degradation.”

For further information contact RosettaR.Fackler@ky.gov 

A bison and calf contentedly munch on hay while waiting to be released into the new pastureland. Reprinted with permission by The Community Record

2006 legislative highlights for the EPPC

By Linda Potter, Department for Natural Resources and
Karen Wilson, Office of Legislative and Intergovernmental Affairs

The Environmental and Public Protection Cabinet successfully shepherded several environmental and safety legislative initiatives through the 2006 Kentucky General Assembly. Governor Ernie Fletcher signed into law a number of bills that strengthen the state's ability to protect both the environment and the citizens of the Commonwealth. The following is a summary of several of these important pieces of legislation.

Department for Environmental Protection

- **SB 50** authorizes the Kentucky Division of Waste Management (DWM) to offer grants to counties to promote recycling infrastructure development and household hazardous waste collection programs. The funding for the grants comes from reallocating a portion of money that is currently collected through the Kentucky Pride Fund, which was established by the 2002 General Assembly.

Currently, counties receive grant funding to pay for illegal dump cleanups. With the new law, counties that have cleaned up their illegal dumps will be able to apply for grant funding for recycling infrastructure and household hazardous waste collection. The DWM will continue to focus on illegal dump cleanup; however, remaining funding will now help counties establish programs that will help to prevent new illegal dumps from forming.

Two new laws extend the sunset date on the collection of fees that help the cabinet implement important environmental protection programs:

1. **HB 145** reauthorizes the \$1 fee on new tires sold in Kentucky. In past years, the approximately \$2.8 million generated from this fee has been used to clean up dangerous and unsightly tire piles throughout the Commonwealth. Since the inception of the tire fee in 1998, more than 14 million waste tires have been removed from scrap tire piles and collected at county amnesty events. Today, most of the large tire piles have been cleaned up.

More recently, tire fee revenue has allowed the DWM to support a successful grants program for crumb rubber applications on school athletic fields and playgrounds, as well as provide funding

support for burning tire-derived fuel for electricity generation at several facilities.

2. **SB 75** extends the hazardous waste assessment fee to June 30, 2008. The fee is assessed on generators of hazardous waste. The new law waives the fee for a generator who owes less than \$50 for a calendar year. Approximately \$1.8 million per year is generated for the Hazardous Waste Fund, which is used to clean up contaminated sites across the state and to respond to emergency releases of pollutants. Since the inception of the fee in 1981, the fund has enabled the state to clean up hundreds of contaminated sites for which the party responsible for contamination cannot be found or is financially unable to pay. The Hazardous Waste Management Fund is an essential funding source to remediate abandoned contaminated sites and respond to emergency situations. It also serves as an economic incentive to promote waste reduction and prevention.

- **HB 383** increases the penalty for persons who drill water wells without proper certification.

Approximately 300,000 Kentuckians rely on private water sources for drinking water, and most rely on water wells. Water well drillers are independent, small business owners who construct water wells for private and public drinking water and other uses, and monitoring wells for groundwater monitoring relating to permit compliance or remediation of spills. Certified water well drillers have demonstrated experience and competence in drilling wells and have obtained liability insurance. However, they are often at a competitive disadvantage because they lose jobs to those who drill without

certification. Substandard wells create health issues because they are not properly sealed and protected against contaminants such as bacteria.

- **SB 76** allows the cabinet to terminate post-closure monitoring and maintenance of hazardous waste disposal facilities before the end of a 30-year responsibility period. Under current state law and regulation, an application to terminate post-closure monitoring and maintenance cannot be made until a minimum of 30 years of monitoring and maintenance is completed. The amended statute mirrors federal law, in which an application can be made to shorten the post-closure monitoring and maintenance period. The federal law also has provisions for extending the monitoring/maintenance period beyond 30 years, as does current state law. The amended statute gives EPPC the authority to require additional monitoring, maintenance and remediation at any time after termination of post-closure monitoring should it be determined necessary to protect human health and the environment.

Department for Natural Resources (DNR)

- **SB 200** enhances enforcement of mine safety. In the wake of tragic mining fatalities recently suffered in the Appalachian coal region, legislative teams from the cabinet and Governor Ernie Fletcher's office joined with members of the legislature, the coal industry and labor representatives in a bipartisan effort to address this critical issue. Provisions include new accident reporting requirements; additional self-contained self-rescuer caches required in all underground mines; emergency evacuation drills; lifeline cords in all escapeways; effective two-way communication devices required between the working sections of the mine and the surface; emergency action and firefighting plans; increased enforcement authority

Continued on Page 11

Rockcastle rids its landscape of unsightly appliances

By David Keltner
Division of Conservation

We have all seen them, especially in winter when there is no foliage to hide them—white appliances scattered along hillsides or in creeks, begging for a snow to hide them from the otherwise beautiful landscape.

All across the state, conservation districts are tackling this problem. The Rockcastle County Conservation District decided to take action and partnered with the Rockcastle County Fiscal Court and Mount Vernon Scrap for the sole purpose of keeping these white elephants from attacking the landscape.

For three consecutive years the district applied for and received a grant from the Kentucky Soil and Water Conservation Commission in the amount of \$7,500 per year. The Rockcastle County Fiscal Court donated \$2,500 per year and the salvage company agreed to pay \$20 per ton for collected scrap metal.

To create interest in the cleanup project during the first year, the district sponsored a contest among local organizations awarding cash prizes to those that collected the most appliances. Skaggs Creek Baptist Church won \$500, First

The white goods drive in Rockcastle County was a major success, bringing in more than 5,000 appliances in a three-year period. Photo by Sandy Whitaker, USDA in Mount Vernon



Baptist Church youth group received \$250 and Rockcastle County Kiwanis Club received \$150 for their cleanup efforts.

As word spread about the “white goods drive,” neighboring counties benefited from appliances brought in from their counties as well. The district paid \$5 for each appliance delivered to the salvage yard, and Mount Vernon Scrap paid \$20 per ton. The appliances are crushed at the scrap yard and recycled for use in the manufacturing of other products. A total of 5,438 appliances were delivered to the scrap yard over a three-year period.

Rockcastle County Judge-Executive

Bus Carloftis was pleased with the drive. “Five dollars is a small price to pay for an appliance to be removed from an illegal dump,” he said.

“We are overwhelmed, and they are working us to death,” said Gary Miracle, owner and operator of Mount Vernon Scrap.

“Sandy Whitaker, our district administrative secretary, did an excellent job organizing and implementing this project,” said Tommy Mink, district chairperson. “We are proud to be a part of this community effort that eliminates these eyesores from the landscape.”



Evergreens threatened by Hemlock woolly adelgid *Continued from Page 1*

affected trees in April, and KDF district personnel applied an insecticidal soap treatment in May. The division is hopeful that these two treatments will kill the pest but success of the treatments will not be determined for several months.

Early detection is key to controlling the adelgid. Chemical treatment generally is impractical in a forest setting, but the division decided to try because the affected trees were accessible and relatively few in number.

The division is asking private landowners, public park managers and the general public to help locate stands of hemlocks and to be on the lookout for adelgid infestations.

The adelgid remains active during

cold weather and is easy to see. It is found on the underside of hemlock branches and creates a white, woolly mass in which to live. Large populations are readily visible, and binoculars are useful for examining branches more than 20 feet from the ground. The adelgid does not bite or sting. It lives within the woolly mass and feeds on the tree.

Other than early detection, there are few alternatives for controlling the Hemlock woolly adelgid. Aside from chemical treatment, biocontrol options include predator beetles, bacteria, fungi and developing hemlocks that are resistant to attack; but those options take time. Predator beetles show promise but can't be raised as fast as the adelgid is spreading.

Lichens on trees often are mistaken for Hemlock woolly adelgids. Lichens are usually found on the top side of branches and along the trunk of the tree while the adelgid is found only on the underside of branches. Lichens consist of algae and fungi growing together and usually are not harmful to the tree.

Anyone spotting an adelgid infestation should call the Kentucky Division of Forestry, (800) 866-0555, and ask to speak with Tim McClure. Do not attempt to remove a tree. Cutting down the tree and dragging branches may accidentally spread the insect. The division will assist you with control options.

For further information on this insect, visit <http://www.forestry.ky.gov/programs/health/Insects.htm>



Southeast Diesel Collaborative kicks off in Atlanta

Goal is to reduce emissions from diesel engines

By Lona Brewer
Division for Air Quality

In April, more than 350 representatives from the eight EPA Region 4 states met to kick off the Southeast Diesel Collaborative, created to bring together diverse stakeholders who can work to reduce air pollution from diesel engines. The collaborative is part of EPA's National Clean Diesel Campaign, a program combining regulatory measures with voluntary initiatives to reduce diesel emissions across the country.

Specific goals for the collaborative include:

- Spotlighting the links between environment, public health, energy and transportation;



TOP: Trucks line up beneath the IdleAire booms at this facility in Atlanta. Units hanging down attach to the passenger-side window with a minor retrofit that allows truck drivers to get heat and air conditioning without idling their engines. Kentucky soon will be opening two facilities in Oak Grove and Glendale. Photo by Lona Brewer **ABOVE LEFT:** Stakeholders interested in reducing air pollution from diesel engines signed MOUs pledging their support. **ABOVE RIGHT:** LaJuana S. Wilcher signs the MOU for Kentucky. Photographs provided by the EPA

- Solidifying and formalizing partnerships and creating opportunities to advance collaborative efforts;
- Providing an environment for showcasing clean, renewable diesel and emerging emission reduction technologies for agriculture, construction and on-road sectors; and
- Highlighting cost-effective strategies for emission reductions while advancing opportunities for regional economic growth and energy independence.

Environmental and Public Protection Cabinet Secretary LaJuana S. Wilcher attended the collaborative, speaking during a leaders roundtable session and signing the Memorandum of Understanding (MOU) for Kentucky, along with James Bush, Office of Energy Policy; Lona Brewer and Elizabeth Robb, Division for Air Quality. The purpose of the MOU is to articulate the common goals of the collaborative and to bolster the relationships between these stakeholders and EPA Region 4.

The signers agreed to promote reduction of diesel emissions through voluntary initiatives such as retrofitting equipment, promoting the use of biodiesel fuels and idling-reduction practices, promoting the growth of alternative fuel crops to increase sustainable energy sources, providing information about financial incentives to encourage the use of clean diesel equipment and identifying areas where further study and research on the use of diesel fuel are needed.

Continued to Page 16

The Kentucky Division for Air Quality recently installed a new air quality monitoring system in Ohio County. The system is manufactured by OPSIS, a Swedish company whose name roughly translates to “visual strength” in ancient Greek.

The system known as UV-DOAS (Ultra Violet Differential Optical Absorption Spectroscopy) is based on the principle that different compounds absorb UV light at different spectra.

“Ohio County is located downwind of a number of existing power plants, and new ones wish to locate in the area,” said John Lyons, director of the Division for Air Quality. “Investing in cutting-edge technology enables us to track air quality trends better and ensure that current air quality conditions in Ohio County and the surrounding area remain at levels that do not impact public health and the environment.”

The OPSIS system uses a full-spectrum Xenon lamp as the energy source. The lamp is housed in an emitter assembly that is placed approximately 150-500 meters from the monitoring station, depending on the compounds of interest and the projected concentrations of these compounds. A receiver system, mounted at the monitoring station, is aligned to the emitter to receive a concentrated beam of UV light from the emitter. Light is transmitted from the receiver to a spectrometer through a fiber optic cable.

The spectrometer measures the different light spectra and determines the absorption that may have occurred on each. Because specific gases absorb light from known parts of the spectrum, a library is used to automatically determine which compounds are present and at what concentrations. The output is provided to a computer or data logger where it is stored and retrieved as needed.

The UV-DOAS system allows for monitoring of several pollutants using one system. This is cost effective in terms of initial cost of equipment and reduction in

operational expense. This system also allows for the integration of data and better scientific analysis of the data collected. One OPSIS system can replace up to seven separate sampling systems currently in use. In addition, a significant cost reduction can be realized for compounds such as benzene and formaldehyde, as these measurements typically require the use of laboratory

services for analysis of samples, while UV-DOAS provides an in-house analysis.

The Ohio County monitoring station uses two UV-DOAS systems because certain compounds of interest require a shorter UV path length than others. The installation will measure levels of ozone, sulfur dioxide, nitrogen oxides, nitrogen dioxide, ammonia, benzene, toluene, formaldehyde, meta-xylene, para-xylene, ortho-xylene, ethyl benzene, styrene, phenol and elemental mercury. The station also includes samplers for PM_{2.5}, PM₁₀/metals, wet deposition for mercury and meteorological sensors for wind speed, wind direction, humidity, temperature and rainfall.

The Kentucky Division for Air Quality operates an extensive air monitoring program that measures a number of criteria pollutants, for which EPA has established national ambient air quality standards.

In addition, the division operates air monitors that measure pollutants referred to as air toxics, which may pose a significant health risk to the citizens of the Commonwealth. Typically these pollutants are measured using several different instruments.

Although Kentucky has other air monitoring stations that measure many of these parameters, the Ohio County station is the first to use this new monitoring technology and the first that will provide real-time measurements of ammonia and air toxics.

Using light to measure air pollution

A one-stop shop



By Larry Garrison and Elizabeth Robb
Division for Air Quality

The monitor measures light absorption from 200 yards away to determine the levels of many different air pollutants. Photo by the Division for Air Quality



New water quality report will be ready soon

By Maleva Chamberlain
Division of Water

Kentucky is releasing a new Integrated Report (IR) that replaces two separate reports required by the Clean Water Act. The new report fulfills requirements of sections 303(d), 305(b) and 314 of the act, under which states must provide reports that assess the quality of all waters and a list of those that are impaired or threatened.

The Environmental Protection Agency (EPA) has urged states to combine the two reports. To make the report easy for the public to use, EPA has established a common organizational structure.

It is hoped that having all relevant material woven together in two volumes will make this comprehensive report more useful. Volume I will contain assessment and data analyses (the 305[b] portion, also known as the Water Quality Report to Congress) and Volume II will contain the 303(d) listing of impaired or threatened waters. Both parts of the new report cover waters of the entire state, but the Kentucky River, Salt River and Licking River basins are those emphasized and reported in detail in this reporting cycle.

This IR represents all monitoring efforts from the first five-year cycle and two years of the second cycle.

The Kentucky River Basin was monitored in 2003, and the Salt and Licking river basins were monitored in 2004. Data collected by the Ohio River Valley Water Sanitation Commission was used to make assessments for the main stem of the Ohio River.

Impaired waters in these watersheds and those identified in the 2004 305(b) report for the Big Sandy, Little Sandy and Tygarts river basins are listed in the 303(d) section of this new IR. The 303(d) list has approximately 5,160 miles from 910 segments that require development of Total Maximum Daily Load (TMDL) reports. A TMDL is a mathematical calculation and modeling of the maximum amount of a pollutant that a waterbody can receive and still meet water quality standards.

The 303(d) section of the IR contains

the listed waterbodies or segments that will require a TMDL to be developed. It includes detailed assessment information of site-specific impaired waters, watershed information, impairments (pollutants) and source(s).

The Big Sandy, Little Sandy and Tygarts river basins were monitored intensively for the first time in 2003, with results reported in the 2004 305(b) report.



A headwater Appalachian stream. Photo by Randy Payne

The 2006 IR contains impaired waters from those watersheds that are listed in the 303(d) section for the first time. This region of the state contains the largest coal reserves in the Commonwealth and a large mining industry, primarily in the Big Sandy River Basin. There are approximately 780 miles of rivers and streams in the Big Sandy, Little Sandy and Tygarts river basins listed in the 303(d) section of this IR.

EPA's goal is to have all states and tribes submitting an integrated report by 2008. Kentucky has reached this goal with the 2006 report.

Members of the Water Quality Branch of Kentucky's Division of Water have spent many hours reviewing monitoring information from the past two years and

earlier 303(d) lists in order to make all information consistent and current so the information conforms to the new format and 303(d) listings are reconciled to 305(b) assessments.

Past 305(b) reports have categorized waters as supporting, partially supporting or not supporting designated uses. EPA has requested five categories, and the Division of Water has added two

subcategories. The EPA-required categories range from 1, which indicates a waterbody fully supports its designated uses, to 5, which indicates a waterbody does not support a designated use and requires development of a TMDL. Other categories help both EPA and the Division of Water to track the health of a waterbody.

The portion of the report that lists waters that do not meet water quality standards (the Section 303[d]-required listing), will be available for public review and comment. View it at <http://www.water.ky.gov/sw/tmdl/303d.htm>.

The Integrated Report will be available from a link on the Division of Water's Web site at <http://www.water.ky.gov>



Clean and green school bus fleets

Improving air quality and children's health

Did you know that school districts in northern Kentucky are retrofitting their fleets with technology that can significantly reduce tailpipe and in-cabin diesel emissions? Or that those school districts, along with others across the state, are utilizing alternative fuels that also reduce air pollution and children's exposure to pollution?

This year, in celebration of the opportunity that all school districts have to clean up their fleets, Governor Ernie Fletcher proclaimed April 20 as Clean School Bus Awareness Day.

The proclamation, read by Environmental and Public Protection Cabinet Secretary LaJuana S. Wilcher and Education Cabinet Deputy Secretary Laura Owens during Earth Week at Campbell Ridge Elementary, publicized the awarding of \$341,000 from the Environmental Protection Agency (EPA) to the Campbell County School District as part of EPA's *Clean School Bus, USA* competitive grant funds program. The program provides funds to school districts interested in minimizing children's exposure to air pollution from diesel exhaust.

"We salute Campbell County schools, along with the Kentucky Division for Air Quality, for their commitment to improve the health of our most valuable national resource—our children," said EPA's Carol Kemker, deputy director of Air, Toxics and Pesticides, as she presented the check. The Kentucky Division for Air Quality partnered with Campbell County schools on the grant application and sent letters to every school in the state encouraging them to apply.

Each day in America, 24 million children ride a school bus, and school buses drive more than 4 billion miles each year. School buses are the safest way to get children to and from school. However, children are especially sensitive to diesel emissions. *Clean School Bus, USA* is designed to make school buses the safest

By Elizabeth Robb
Division for Air Quality



Campbell County School District, local and state officials celebrate the award of \$341,000 for school bus retrofits, replacements and buy-down of alternative fuels.

Photo courtesy of Campbell County School District



and cleanest way for school children to get to school. Diesel exhaust exposure has been correlated to increased rates of asthma, heart disease, cancer and even increased risk of premature death.

Multiple strategies can be utilized to minimize particulate pollution from diesel engines. Alternative fuels, engine retrofits, bus replacement and idling-reduction strategies are the most popular. EPA funds can be used to retrofit or replace older school buses, or to offset the additional cost of two alternative fuels—biodiesel and Ultra Low Sulfur Diesel (ULSD).

Fuel prices vary from week to week, but due to the rising cost of diesel fuel, some districts have found that incorporating a biodiesel blend actually has saved them money. Biodiesel is commonly blended with petroleum diesel. A B-5 blend, for example, is a blend of 5 percent biodiesel and 95 percent diesel fuel.

B-5 blends can be used in most diesel

engines without voiding the warranty, and many engine manufacturers will allow blends of up to B-20.

Several school districts in Kentucky are currently using biodiesel in their fleets, in blends varying from B-2 to B-20. These include Calloway, Campbell, Christian, Graves, Jefferson, Larue, McLean, Montgomery, Shelby and Warren county school districts. Students and drivers alike find exposure to the biodiesel tailpipe exhaust less irritating. A B-20 blend emits on average 9 percent less particulate matter than pure diesel, 10 percent less carbon monoxide and 21 percent less unburned hydrocarbons.

Other districts, such as Henderson County schools, have used biodiesel in the past and would like to continue, but are having trouble getting it from distributors. However, ground has been broken on a biodiesel plant in Owensboro that will be manufacturing 50 million gallons a year.

Counties using biodiesel in 2007 will be in great shape due to an EPA mandate that all diesel engines begin utilizing ULSD, which dramatically reduces diesel tailpipe emissions, but has lower lubricity than the diesel used in most fleets. Biodiesel has the beneficial property of increasing fuel lubricity, thus easing engine wear and tear.

Kenton and Campbell county school districts are already utilizing ULSD ahead of the 2007 deadline. Currently, ULSD availability is limited, but distribution points will be available statewide beginning in 2007. ULSD can be expensive—between 8 cents and 25 cents more per gallon as compared to conventional diesel. Kenton and Campbell districts need to use ULSD because they have retrofitted their buses with a Diesel Particulate Filter (DPF).

Of the two most common retrofits, DPFs are more costly and time-consuming to install, but they also bear the greatest benefits for air quality and children's

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Faces of Earth Day



By Cindy Schafer
Office of Communications and Public Outreach

During this year's Earth Week, Kentuckians were encouraged to ponder the important question, "What can you do?" "What can any of us do to benefit the environment? The possibilities are practically endless," said Environmental and Public Protection Cabinet (EPPC) Secretary LaJuana S. Wilcher. "Our greatest and most lasting contribution to the Earth will be in the form of small changes made by ordinary people in the course of everyday living."

Earth Week 2006 began with a flurry of activities starting with the raising of the Earth Day flag at the Capital Plaza Tower office building in Frankfort. During the event, Secretary Wilcher stressed the importance of personal action and responsibility, encouraging individuals to take stock of their habits and living patterns, such as resources they consume and the amount of waste they generate.

Other events organized by the EPPC and some of its Earth Day partners included:

- **Kickoff celebration**

Governor Ernie Fletcher officially kicked off the state-wide celebration of Earth Week outside the Capitol, noting the connection between a healthy environment and a vibrant economy, while drawing attention to the administration's environmental accomplishments. During the kickoff, Governor Fletcher distributed \$1.5 million in grants to 47 schools, parks and local governments for the use of "crumb rubber," finely ground rubber from old tires that is used as mulch and a cushioning base for playgrounds and athletic fields.

- **Maxey Flats open house**

The Division of Waste Management held an open house at the Maxey Flats property in Fleming County. Tours were provided at the facility that was once a commercially operated, low-level radioactive waste disposal site. The state bought the property to ensure the proper cleanup of about 4.7 million cubic feet of waste that was disposed from 1963 to 1978.

ABOVE LEFT: A cub scout and his leader plant a snowball bush at Jenny Wiley State Park. Photo provided by Division of Conservation

TOP: EPPC Secretary LaJuana S. Wilcher and Division of Conservation Director Steve Coleman plant at tree at the Baker Natural Area grand opening. Photo provided by the Logan County Chamber of Commerce

ABOVE: Secretary Wilcher, along with her executive staff and others, enjoy a rafting trip along the Elkhorn in Franklin County. Photo by John Holiday

- **Mercury collection in Fayette County**

The EPPC teamed with Lexington-Fayette Urban County Government, the Kentucky Department for Public Health and Mayor Teresa Isaac to offer a free mercury collection and recycling event for residents of Fayette County. More than 700 pounds of mercury was collected. (See *Mercury collection* on Page 15)



LEFT: Education Cabinet Deputy Secretary Laura Owens lends a hand to EPPC's Secretary Wilcher as they raise the official Earth Day flag. Photo by Creative Services
BELOW (left): WLEX-TV Sunrise reporter Lee Cruse receives tips on conserving energy from Secretary Wilcher and Lowes representative Sue Williams. Photo by Lowes
(right): Marie Roberts-Caney Elementary students use soil probes to take soil samples during an Earth Day event. Photo submitted
BOTTOM: Governor Ernie Fletcher presents a check to Kentucky schools and parks for the use of crumb rubber. Photo by Creative Services

• **Baker Natural Area grand opening**

Sixty-six acres of native prairie, woodland and exposed rock outcrops in Russellville was obtained with the support of the Kentucky Heritage Land Conservation Fund to be used for environmental preservation, education and recreation. The grand opening ceremony preceded a weather station demonstration, tree plantings and a tour of the property.

• **Earth Day at Lexmark**

Lexmark International hosted an event to increase awareness of environmental issues among its employees. The event included a car show featuring hybrid and alternative-fuel cars, a 5K fun walk, information booths, seminars and a giveaway of tree seedlings.

• **Local scouts beautify park entrance**

The Floyd County Conservation District celebrated Earth Day by working with local Cub Scout Pack 802. The pack planted snowball and forsythia bushes along the entrance road to Jenny Wiley State park.

• **Campbell County showcases cleaner-burning buses**

The Campbell County School District retrofitted 55 buses with emission controls, which helped to reduce pollution from its fleet of diesel buses. (See *Clean and green school bus fleets* on Page 8).

• **Live at Sunrise with Lee Cruse**

WLEX-TV's Lee Cruse and EPPC's Secretary Wilcher spent a morning during Earth Week at Lowes on Nichols Park Drive in Lexington demonstrating energy conservation by promoting items like low-flow shower heads, energy-saving lightbulbs and ENERGY STAR appliances. Lowes stores nationwide are dedicated to conserving natural resources. Visit www.lowes.com/environment



• **EKPC dedicates power plant**

East Kentucky Power Cooperative's electric power plant at Pearl Hollow Landfill in Hardin County is fueled by methane, a flammable gas produced when organic landfill waste decays. The power produced by the plant's three generating units will be marketed by 14 electric cooperatives around the state through the EnviroWatts program and will supply enough electricity to power more than 1,400 homes.

• **Partnership gives presentations**

The Breathitt County Conservation District partnered with the Division of Forestry, Division of Conservation and Natural Resource Conservation Service to visit local school students and instruct them on tree planting, soil sampling, and land and water conservation. These visits helped educate Breathitt County students on the importance of conserving the state's natural resources.





2006 legislative highlights for the EPPC

Continued from Page 3

providing the DNR commissioner the power to assess civil penalties for violations of roof control and mine ventilation plans; and increased number of regular inspections from two to three inspections a year for all licensed underground mines.

These measures are designed to ensure Kentucky's miners are properly trained and equipped to escape the mine safely and to allow emergency responders to react quickly in the event of an emergency.

- **HB 572** requires all miners to be drug and alcohol free as a condition of certification. HB 572 embodies the recommendations of the Mine Substance Abuse Task Force and creates a new program aimed at combating the serious threat that substance abuse poses to miner safety. Miners will have to demonstrate that they are drug and alcohol free prior to examinations for any certification. Breathalyzer tests will be conducted at exam sites and applicants must pass an 11-panel drug test. The Office of Mine Safety and Licensing (OMSL) will conduct post-accident drug and alcohol testing on individuals involved in serious accidents or fatalities. Miner training programs will include annual substance abuse awareness training. Coal companies must report any individual who has been discharged for violation of the company's substance abuse policies to OMSL within one business day, and DNR's commissioner is required to suspend the certification of any miner who violates the drug-free condition of his certification. HB 572 also provides an appeal process through the Mine Safety Review Commission and encourages coal companies to adopt their own substance abuse programs. The new

legislation provides a 5-percent credit on workers' compensation premiums for those companies that have a certified drug-free work place.

- **SB 147** attaches the Forestry Best Management Practices Board administratively to the Division of Forestry.

- **HB 450** was not an agency-sponsored bill; however, the Division of Forestry applauds the efforts of its sponsors. The legislation streamlines the regulatory process and sends a strong message to loggers who are deemed "bad actors" for their logging practices, especially when water pollution occurs. The bill allows the Division of Forestry to shut these operations down when they have been issued two or more "bad actor" designations and are operating in violation of best management practices.

- **SB 136** is a "cleanup bill" that revises Kentucky statutes on surface mining to keep up with changes in federal law. In some cases, Kentucky law was less stringent than federal law, creating the possibility for a coal operation to comply with Kentucky requirements, but violate a federal standard. Those sections addressed the following: the phase-out of permits for surface coal mining and reclamation operations of two acres or less; language for permit renewals; permitting requirements for the removal of coal of 5,000 tons or less on private land; language pertaining to construction of roads above a highwall, and language pertaining to a permittee's performance bond and actions of third parties.

- **SB 137 and 138** pertain to blasting regulations. The DNR recognized that current civil penalties for blasting violations were inadequate, particularly for violations such as "flyrock" that have the potential to cause death or serious injury. SB 138 increases the range of civil fines from \$20-\$1,000 to \$250-\$5,000 and adds language that would allow the Division of Explosives and Blasting to assess a civil fine of not more than \$20,000 for violations where material leaves the "controlled area" and results in or could have reasonably resulted in death or serious injury.

Investigations of blasting incidents revealed that some occurrences could be attributed to licensed surface mine blasters who were exempt from the retraining required of other blasters in the state. SB 137 removes that exemption so that anyone blasting in Kentucky must undergo the same retraining to become licensed.

- **SB 237** creates new blanket bonding rates for the oil and gas industry. The existing statute allowed a single operator to file a \$10,000 bond that would cover an unlimited number of oil/gas wells drilled in Kentucky. DNR felt the blanket bond of \$10,000 was inadequate to ensure proper plugging if an operator failed to perform its well plugging obligation. There are more than 8,000 abandoned wells in the Commonwealth that need plugging to avoid environmental damage.

The bill establishes a tiered-bonding structure as follows: 1-25 wells require a \$10,000 bond; 25-100 wells require a \$25,000 bond; 101-500 wells require a \$50,000 bond; and 501 wells or more require a \$100,000 bond. 

ENERGY STAR homes take hold in Kentucky

By Lola Lyle
Office of Energy Policy

During the past year, more than 800 ENERGY STAR labeled homes have been constructed in Kentucky, with more than 75 percent of those built by Arlinghaus Builders. There are 45 ENERGY STAR builders/partners in the Commonwealth, with Arlinghaus being one of 10 builders that construct only ENERGY STAR labeled homes.

ENERGY STAR qualified homes are independently verified to be at least 30 percent more energy efficient than homes built to the 1993 national Model Energy Code or 15 percent more efficient than the state energy code, whichever is more rigorous. Savings are based on heating, cooling and hot water energy use and are typically achieved through a combination of effective insulation, high-performance windows, tight construction, tight ducts and energy-efficient heating and cooling equipment. Almost 10 percent of new homes built nationwide receive the ENERGY STAR label, and since 1995 more than 360,000 ENERGY STAR qualified homes have been built.

Arlinghaus Builders constructs approximately 225 ENERGY STAR homes per year, primarily in Boone and Kenton counties. "Every job is important to the company, and everyone involved works to construct a quality home we would feel comfortable living in ourselves," said Ted Arlinghaus. "Each of our homes features ENERGY STAR appliances, compact fluorescent lights and reduced air infiltration. Reduced air infiltration leads to improved comfort, better indoor air quality and lower utility costs," he said.

ENERGY STAR is a voluntary, government-backed program helping businesses and individuals protect the environment through superior energy efficiency.

Governor Ernie Fletcher issued Kentucky's first comprehensive energy strategy (*Kentucky's Energy: Opportunities for our Future*) last year. It contains



54 recommendations to guide the Commonwealth's policy making as it relates to energy. Included in the recommendations is the development of public-private partnerships to promote energy efficiency through education and outreach. ENERGY STAR has become one of the catalysts to put that recommendation into action. Kentucky's comprehensive energy strategy, as well as information about a series of high-performance home workshops geared toward builders, can be found at www.energy.ky.gov. For information about ENERGY STAR qualified homes, visit www.energystar.gov.

An ENERGY STAR home built by Arlinghaus Builders. Photo submitted



Clean and green school bus fleets *Continued from Page 8*

health. DPFs reduce particulate matter, hydrocarbons and carbon monoxide by 60 percent to 90 percent.

Diesel Oxidation Catalysts (DOCs) are a popular pollution reduction retrofit due to their relatively low cost and ease of installation. DOCs require no special fuels or other adaptations, and they reduce emissions of fine particulates by at least 30 percent, hydrocarbons by 50 percent and carbon monoxide emissions by 30 percent.

Kenton County School District, the first to retrofit buses in the state, was offered residual EPA funds by the Hamilton County, Ohio, Department of Environmental Services in 2004. The district used the funds to retrofit 11 buses with DOCs. Kenton County was also awarded a one-time grant to install diesel particulate filters on 54 buses.

"Our buses have been running great. We have had no post-retrofit problems with our fleet thus far," said Tom Bach, transportation director for Kenton County schools.

Campbell County is utilizing its grant funds to pay for biodiesel, ULSD, retrofits and replacements. In the next six months, 35 buses will be retrofitted with DPFs, and 20 will be fitted with a combination of DOCs and crankcase ventilation filters.

To almost completely eliminate in-cabin pollution, Campbell County School District is planning to retrofit with yet another technology, the crankcase ventilation filter. Research has shown that in-cabin pollution levels can still be surprisingly high even when retrofitted with DPFs and DOCs. The reason is the crankcase located under the hood in the

front of the bus. Every time the school bus door opens, pollution from under the hood escapes into the cabin. Crankcase ventilation filters have been shown to reduce in-cabin particulate pollution levels by close to 100 percent.

Kenton County also adopted the first idling reduction policy in the state, which limits the amount of time that drivers can idle their buses. Campbell and Montgomery county districts have followed suit. Idling reduction policies are a way to save money on fuel while reducing air pollution and exposure to exhaust. Idling reduction policies can also better schools' indoor air quality, as many school bus pick-up/drop-off points are located next to the air intakes of school ventilation systems.

If you would like more information, contact Elizabeth Robb at (502) 573-3382 or elizabeth.robb@ky.gov



KY EXCEL on the move

By Division of Compliance Assistance staff

“This is a good day.” These simple words uttered by Jim Dunbaugh of American Synthetic Rubber Co. LLC came as the company’s president shook hands with leaders from the Kentucky Department for Environmental Protection. American Synthetic Rubber had just been recognized nationally by the U.S. Environmental Protection Agency (EPA) for the facility’s significant commitment to reduce its hazardous air pollutants and solid waste. Now the Louisville company was proudly accepting its KY EXCEL master-level membership certificate from the Kentucky Department for Environmental Protection.

American Synthetic Rubber Co. is just one of a growing number of Kentucky facilities, organizations and individuals finding satisfaction through participation in KY EXCEL. The voluntary environmental leadership program, launched by the Department for Environmental Protection’s Division of Compliance Assistance earlier this year, was established to recognize, encourage and facilitate voluntary environmental efforts. The enthusiasm that surrounds this innovative program has been tremendous, and the voluntary commitments being made by the program’s inaugural members are a testimony that this young program is on the move.

“It is exciting to watch Kentucky’s citizens and businesses come forward and say that they want to be a part of the next generation of environmental protection in Kentucky,” said Aaron Keatley, director of the Division of Compliance Assistance. “The voluntary projects performed by KY EXCEL members are already having a significant positive impact on Kentucky’s environment.”

“KY EXCEL is just getting started. Our goal is to be the most active and successful voluntary environmental program in the country,” added Keatley. “I firmly believe that KY EXCEL has the potential to create a giant footprint of improvement unlike any regulatory program has been able to achieve in recent years. The environmental projects performed by KY EXCEL members have the ability to impact every citizen in Kentucky.”

The scope and significance of the voluntary projects being made by KY EXCEL members help explain why the agency believes that the program has such great potential. The first entities to join KY EXCEL at the master level—the program’s highest membership level—all made commitments that will help reduce their environmental impacts well beyond their regulatory obligation.

For example, Temple Inland Inc., a paper mill located in Maysville, committed to reduce its sulfur dioxide emissions, increase its energy efficiency, reduce the amount of solid waste it sends to the landfill and reduce the use of chemicals in its production processes. American Synthetic Rubber Co. committed to reduce its 1,3-butadiene and toluene emissions, while reducing solid waste disposal and increasing recycling. Louisville Forge &

“There are many unique partnerships that can be formed across Kentucky. It would be a shame not to capitalize on the opportunities that they can provide. KY EXCEL works hard to partner individuals with needs with individuals with resources.”

Aaron Keatley
KY EXCEL



TOP: Ambrake Manufacturing Associate Barbara Dones performs a final inspection on a trivalent chromium coated Honda Accord disc brake.

Photo provided by Ambrake Manufacturing LTD

ABOVE: Improvements in pollution control equipment will help American Synthetic Rubber Co. meet pollution reduction goals included as part of its master-level membership in KY EXCEL. Photo provided by American Synthetic Rubber Co.

Gear promised to consume less energy, generate less waste and increase recycling.

In addition to these larger facilities, the program's diversity is reflected in the commitments being made by small businesses, organizations and even individual households that have joined KY EXCEL or expressed an interest. At recent KY EXCEL workshops, sponsored by the Kentucky Pollution Prevention Center, more than 50 of the 100 organizations and companies that attended also indicated that they were planning to join KY EXCEL.

"When you look at the commitments already being made in KY EXCEL and you start evaluating just how many entities may eventually join KY EXCEL, the number of potential voluntary environmental projects that could be done each year is staggering," said Keatley. "Imagine if just one business, one organization and one individual from every Kentucky community stood up and said, 'I want to do something more.' The number of voluntary commitments being made would be in the ten's of thousands each year. This positive impact on our communities and environment would be incredible."

While forging ahead in its mission to improve Kentucky's environment through voluntary environmental projects, KY EXCEL has also received national recognition. Its unique and innovative features have caused many to take notice. Because of its potential to serve as a model for other states, EPA awarded the Department for Environmental Protection a \$189,000 grant to administer the program. Kentucky representatives have been asked to describe the program at several national forums.

KY EXCEL also creates an atmosphere that encourages improvement over time. Participants routinely regulated by the department are asked to

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Louisville Forge & Gear Works produces quality precision forgings for high performance use in the automobile, aerospace and farm machinery sectors as well as other markets. Among its better-known products are drive shafts. Part of the process includes setting molds as shown above. Photo provided by Louisville Forge & Gear Works LLC

2006 KY EXCEL MEMBERS

Temple Inland Inc. (Master member)—Temple Inland's Maysville paper mill has committed to reducing sulfur dioxide emissions, increasing energy efficiency, reducing the amount of solid waste being landfilled and reducing the use of chemicals in its production processes. The facility is a member of the EPA's National Environmental Performance Track program.

American Synthetic Rubber Co. (ASRC) LLC (Master member)—ASRC, located in Louisville, has committed to reduce its 1,3-butadiene emissions by more than 50 percent before the end of 2008 and its toluene emissions by 11 tons over the next three years. Other voluntary commitments target solid waste disposal and recycling. ASRC is a member of the EPA's National Environmental Performance Track program.

Louisville Forge & Gear LLC (Master member)—Louisville Forge & Gear, in Georgetown, has committed to reduce energy consumption and waste generation beyond levels required by Kentucky law. The company also voluntarily committed to increase its recycling.

Webasco Roof Systems Inc. (Master member)—A member of the EPA's National Environmental Performance Track program, Webasco Roof Systems, of Lexington, made commitments to reduce its disposal of hazardous solvent waste by 15 percent, reduce hazardous air pollutants by nearly 3 tons, reduce its annual water use and reduce its annual energy consumption.

Ambrake Manufacturing LTD (Master member)—Elizabethtown's Ambrake Manufacturing committed to eliminating cadmium and lead additives in its electroless nickel plating bath, reducing rinse water by 50 percent in its electrodeposition painting process, reducing hexavalent chromium in its wastewater by 90 percent and reducing hazardous waste generation by 5 percent.

St. Elizabeth Medical Center (Leader member)—The first medical center to join KY EXCEL, St. Elizabeth made a series of commitments that will continue its program of recycling batteries, fluorescent lamps, paper, cardboard, formaldehyde and xylene substitute.

KI USA Corporation (Leader member)—KI USA, from Berea, has committed to implementing activities that will protect potential stormwater contamination beyond regulatory requirements, increase heating efficiency and change its lubricating oils processes to minimize waste generation.

Taylor residence (Advocate member)—This Lexington household became the first household to join KY EXCEL. As a family, the Taylors have committed to work within their neighborhood to increase the number of households that participate in Lexington's curbside recycling program.

Smith Management Group Inc. (Advocate member)—This Lexington consulting firm decided to extend its office's existing recycling efforts to areas other than paper. It has also committed to construct a butterfly garden in the industrial area where the office is located.

Green/Tradewater Rivers Basin Team (Advocate member)—This diverse team is focused on enhancing the Green and Tradewater river basins. Its commitment is to work with the city of Franklin and Simpson County to develop local ordinances governing zoning and growth. The program will explain issues including community environmental impacts, growth readiness planning, preserving streams and wetlands, improving impaired streams, public involvement and education, and economic impacts.

Kentucky Business Environmental Assistance Program (KBEAP) (Advocate member)—KBEAP is a contractor for the Department for Environmental Protection that provides compliance assistance services for small businesses dealing with air quality requirements. KBEAP has committed to participate in KY EXCEL presentations, provide self-assessment assistance to potential members and help promote KY EXCEL to its clients and encourage program participation.

Strand Associates Inc. (Advocate member)—Strand Associates is a national civil and environmental engineering consulting firm with offices in Lexington and Louisville. It has committed to a variety of projects that will reduce Strand's eco-footprint and encourage its employees to live healthier lives.

Mercury collection

Division of Waste Management
co-sponsors four collection events



ABOVE LEFT: *These mercury thermometers and other devices were collected at the Louisville mercury drive. ABOVE RIGHT:* *This container of mercury was brought in by a Lexington resident.* Photos provided by the Division of Waste Management

By Eva Smith-Carroll
Division of Waste Management

The Environmental and Public Protection Cabinet's (EPPC) Division of Waste Management (DWM) recently co-sponsored mercury collections in four cities and handed out mercury-free thermometers.

This is a new effort initiated by EPPC Secretary LaJuana S. Wilcher to address an under-acknowledged waste stream—household hazardous waste. By partnering with other state agencies and local governments DWM has collected, and properly disposed of, hundreds of pounds of mercury and mercury-containing items.

"This is the wave of the future," said Bill Burger, manager of the division's Field Operations Branch. He praised recent legislation that will make grant money available to address household hazardous waste collection.

Mercury collections were conducted in the following areas:

McCracken County, April 1—169

pounds collected. Partners included the Cabinet for Health and Family Services (CHFS), Paducah Power Systems and the McCracken County Solid Waste Coordinator's office.

Lexington-Fayette Urban County Government, April 22—700 pounds collected. Partners included CHFS and Lexington-Fayette Urban County Government.

Louisville Metro, May 20—246 pounds collected. Partners included CHFS and Louisville Metro.

Madison County, Oct. 14-15, 2005—207 pounds of elemental mercury and mercury-containing items were collected. Partners involved were CHFS, Education Cabinet and the Madison County solid waste coordinator's office.

From 2000 to mid-May 2006, there were 92 mercury spills in Kentucky that involved federal or state response—including 33 spills in schools and 21 in



This old bottle of mercury clearly states the harmful effects of exposure to quicksilver. Photo by DWM

Madison County collection

To learn more about the success of the mercury collection in Madison County, visit <http://www.eppc.ky.gov/education/outreach/law/law2006/> and click on the Winter 2006 issue.

homes. If not cleaned up properly, spills of even small amounts of elemental mercury, also called "quicksilver," can have serious health consequences.

Mercury information is available by going online and accessing the Household Mercury Spills fact sheet at <http://www.waste.ky.gov/factsheets/> or by calling the Division of Waste Management at (502) 564-6716.



Southeast Diesel Collaborative kicks off in Atlanta *Continued from Page 5*

Specifically, the southeast collaborative will be initially focusing on ways to reduce diesel emissions from construction and agricultural equipment.

Why work on diesel?

The diesel engine continues to be a workhorse in the United States, powering many of the country's large trucks, buses, farm, railroad, marine and construction equipment. Expectations are that diesel engine use in these areas will increase due to the superior performance characteristics of the engine. Diesel engine exhaust, however, contains harmful pollutants in a complex mixture of gases and particulates. Human exposure to exhaust comes from both highway and off-road uses of diesel engines. Long-term inhalation is likely to pose lung cancer hazards to humans, and short-term exposure can cause health risks including aggravation of asthma, decreased lung capabilities and other health problems. United States EPA has listed diesel soot as a likely carcinogen.

Our "legacy" fleet

Although on-highway diesel engines have been gradually getting cleaner for several years, federal mandates for emission reductions from off-road diesel equipment are being phased in gradually over the next few decades. Changes made to federal diesel fuel standards have reduced emissions from on-highway use. Additional changes are being made later this year for on-road diesel fuel and in 2007 for off-highway diesel fuel.

However, existing diesel engines in operation today are not impacted by these new requirements. According to the U.S. Department of Energy, the normal lifetime for a heavy truck is nearly 30 years, which means that these vehicles—the "legacy" fleet—will continue to operate for many more years. When one considers that a typical heavy-duty diesel engine may power a truck for as long as 1.5 million miles and idles approximately 1,800 hours per year, the need to reduce emissions from legacy fleet engines is obvious. Some options to accomplish these reductions include idling reduction technology, retrofit technology and alternative fuels.

Of special interest in Kentucky is the upcoming opening of two "IdleAire" facilities at truck stops in Oak Grove, off

I-24, in the southern part of the state, and off I-65 in Glendale, south of Elizabethtown.

At an IdleAire facility, a diesel truck driver can get heat and air conditioning through units that hook up directly to the passenger-side window, instead of idling the engine. Satellite television, movies and Internet hookups can come directly through the units. An hourly charge for the service is less than the price of a gallon of fuel.

The use of retrofit technology for existing engines, lower-emitting biodiesel fuel blends and on-road truck idling reduction initiatives were discussed at the collaborative as a means to reduce diesel emissions throughout the conference. Presentations were made on several different demonstration projects throughout the Southeast including EPA National Clean School Bus USA projects (see *Clean and green school bus fleets* on Page 8).

Of particular concern was ensuring

increased biodiesel production to meet increased demand, ensuring that fuels met American Society for Standards and Materials (ASTM) standards for quality, the lack of existing infrastructure to ensure fuel availability and strategies to increase the use of biodiesel over larger areas, possibly specific area or regional use of a B5 blend (5 percent biodiesel and 95 percent petroleum diesel) versus only pockets of B20 (20 percent biodiesel).

While the initial kickoff meeting for the collaborative had overall good attendance, it was noted by many that in order for the collaborative to be successful there needs to be involvement from additional sectors. Specifically, we need partnerships with our agriculture, construction, transportation and commerce communities; they are all key stakeholders in this project.

If you work in one of these sectors and are interested in joining the collaborative, contact Lona Brewer at (502) 573-3382 or lona.brewer@ky.gov



KY EXCEL on the move *Continued from Page 14*

prepare an environmental management plan and conduct a performance assessment before joining KY EXCEL. These basic tools begin the process for an organization to evaluate its environmental management programs and assess its compliance. The Division of Compliance Assistance will assist any entity that identifies deficiencies in its program and needs assistance in improving its environmental performance. Nonregulated participants do not need to complete an environmental management plan or an assessment. In addition, all participants are expected to commit to new voluntary projects every year.

"Perhaps my favorite part of this exciting new program is the partnership opportunities that it provides," said Keatley. "We encourage businesses, organizations and individuals to work together through KY EXCEL to achieve goals that an individual organization would be unable to accomplish."

There are many companies with resources and abilities that can assist schools, civic organizations and private individuals in their efforts to improve Kentucky. In addition, there are a number of individuals with expertise who can help Kentucky's facilities improve environmental management.

"There are many unique partnerships that can be formed across Kentucky. It would be a shame not to capitalize on the opportunities that they can provide. KY EXCEL works hard to partner individuals with needs with individuals with resources," said Keatley.

The Division of Compliance Assistance accepts applications for KY EXCEL membership on an ongoing basis. For information on how to become a participant in KY EXCEL, contact the Division of Compliance Assistance at (800) 926-8111. You can find additional information about the program and the process for becoming a KY EXCEL member on the division's Web site at www.dca.ky.gov.





Governor Fletcher holds ENERGY STAR celebration for Kentucky companies, organizations

By Lola Lyle
Kentucky Office of Energy Policy

Kentucky became the fourth state in the nation to be declared an ENERGY STAR partner by the U.S. Department of Energy (DOE) and the U.S. Environmental Protection Agency (EPA) at ceremonies this year. Governor Ernie Fletcher and representatives of the two federal agencies also recognized four ENERGY STAR national award winners from Kentucky.

The ENERGY STAR awards acknowledge leading companies and organizations for their outstanding contributions to environmental protection through energy efficiency. For the first time, Kentucky had four nationally recognized awardees. National ENERGY STAR award winners are selected from more than 8,000 organizations that participate in the ENERGY STAR program.

“Together these organizations are helping us use less energy, save money, protect the environment and strengthen our economy,” said Governor Fletcher. “I encourage all Kentuckians to look for the ENERGY STAR logo when shopping for products that use energy.”

Kentucky’s National 2006 ENERGY STAR Award recipients were:

- **Toyota Motor Manufacturing North America Inc.**—received the Sustained Excellence Award for Energy Management.

In 2005, Toyota Motor Manufacturing North America (TMMNA) continued to follow its successful path of continuous improvement by achieving an 8 percent reduction per vehicle in energy consumption. This was accomplished at a time when new manufacturing capabilities were added and total vehicle production increased. In addition to a corporate-wide energy management system, TMMNA completed a study of new generation lighting in its plants. The company also established an energy benchmarking procedure for its North American auto assembly plants using EPA’s energy performance indicator.

- **GE Consumer & Industrial**—received the Sustained Excellence Award as a Product Manufacturer.

GE Consumer & Industrial has consistently demonstrated its commitment to the sale and promotion of ENERGY STAR qualified products through national, regional and local ENERGY STAR promotions. In 2005, GE

Signing of the declaration making Kentucky an ENERGY STAR partner (from left to right; back row): John Davies, Division of Renewable Energy and Energy Efficiency; Bruce Bremer, TMMNA; Earl Jones, GE Consumer & Industrial; Donna Thrush, McCreary County Community Housing Development Corp.; and Commerce Cabinet Secretary George Ward. Left to right; front row: Carol Kemker, EPA; Richard Karney, DOE; and Governor Ernie Fletcher.

Photo by Creative Services

Consumer & Industrial aggressively focused on energy-efficient products, resulting in significant increases in sales of ENERGY STAR qualified appliances and compact fluorescent light bulbs (CFLs). The number of GE’s ENERGY STAR qualified appliance models increased by 22 percent over the previous year. More than 91 percent of GE’s CFLs are ENERGY STAR qualified.

- **Kentucky Office of Energy Policy**—received the Excellence in Outreach Award.

The Kentucky Office of Energy Policy (KOEP) is recognized for leadership in promoting ENERGY STAR products and practices throughout state government and the Commonwealth. In 2005, KOEP coordinated a statewide information initiative with first lady Glenna Fletcher to raise the awareness of ENERGY STAR product benefits. KOEP encouraged families to join an online pledge to replace a standard household light with an ENERGY STAR qualified model. Those efforts enabled Kentucky to become a national leader among states with the online pledge initiative.

- **McCreary County Community Housing Development Corp.**—received the award for Special Recognition for Energy Efficient Affordable Housing.

The corporation is being recognized for its mission of improving the quality of housing in McCreary County. All homes built by this agency are affordable and incorporate energy-efficient and healthy home features. The program includes training homeowners about the value of ENERGY STAR construction standards and teaches them how best to take advantage of these features after purchase.



Competition encourages environmental awareness

By Martin Bess
Division of Conservation

The 2006 edition of the Kentucky Envirothon was a close contest between Louisville's duPont Manual High School scoring 424 points for first place, Fayette County 4-H earning 423.6 for second place and Oldham County FFA Team 1 totaling 421.4 for third.

The Kentucky Envirothon competition was held in May at the Kentucky Leadership Center near Nancy, Ky. The Envirothon is an international environmental competition for high-school students with the simple idea of combining hands-on education with the excitement of good competition and spending a day of fun in the outdoors. As in all Envirothon competitions, the students work together as a



TOP RIGHT: *DuPont Manual High School scored top honors as 2006 Envirothon champions.* **ABOVE LEFT:** *The Caldwell County team won the soils event and placed fourth overall.* **ABOVE RIGHT:** *Oldham County FFA Team 1 participates in the aquatics competition.*
Photos provided by the Division of Conservation and Natural Resources Conservation Service/USDA

team and are scored based on team participation as they compete to solve environmental problems. Winners of the state competition get to compete in the Canon Envirothon.

The Kentucky competition started with 45 teams contending for the top five spots from each of two regional competitions that took place in April. Students were tested on their environmental knowledge of soils, aquatics, forestry, wildlife and "Water Stewardship in a Changing Climate," a team presentation based on a specific scenario.

The Fayette County 4-H team won the team presentation and forestry category. DuPont Manual was the winner in "Water Stewardship in a Changing Climate," Oldham County won the wildlife category and Caldwell County won the soils event and finished fourth overall. Southwestern High School in Pulaski County won the aquatics event on the way to an eighth-place finish.

DuPont Manual will represent Kentucky at the Canon Envirothon hosted by the University of Manitoba in Winnipeg, Manitoba, in July.

Kentucky Envirothon sponsors include the Kentucky Association of Conservation Districts; Kentucky Farm Bureau; Kentucky Department of Agriculture; Kentucky Department of Fish and Wildlife Resources; Kentucky Association of Conservation Districts Auxiliary; Kentucky Environmental Education Council; Metcalfe, Russell, Cumberland, Green, Harlan and Laurel county conservation districts; Natural Resource Conservation Service; Kentucky Division of Forestry; Division of Water; U.S. Forestry Service and the Division of Conservation. 

Awards

Environmental achievers receive awards

To celebrate the 36th anniversary of Earth Day, the Environmental Quality Commission recognized several groups and individuals for their environmental contributions.

“Groups and individuals, children as well as adults, are being recognized for doing their part to protect the environment we all enjoy,” said LaJuana S. Wilcher, secretary of the Environmental and Public Protection Cabinet (EPPC), during the ceremony. “All Kentuckians should follow their example as stewards of our fragile environment.”

The Earth Day award recipients are:

- **Glenn O. Swing Elementary School Energy Savers Team, Covington**—for planning and implementing an energy awareness and conservation program.
- **Mammoth Cave Restoration Field Camp, Edmonson and Barren counties**—for undertaking conservation and restoration projects in the cave and karst country of south central Kentucky.
- **Bacon Creek Watershed Council, Hart County**—for holding creek and community cleanups, education programs and heritage events, centering around the watershed.
- **Caryn Walker and the Brown School 12, Louisville**—for rewriting the Partnership for a Green City’s environmental principles to educate their peers in understanding environmental responsibility.
- **Sister Rose Marie Cummins, Springfield**—for using her position as director of the Dominican Earth Center to teach members of the community about being good stewards of the land in central Kentucky.
- **Logan County Conservation District, Logan County**—for construction of the Baker Natural Area, a 66-acre environmental site.
- **Friends of Wolf Run Inc., Lexington**—for drawing attention to issues with Wolf Run Creek through monitoring water



ABOVE: Earth Day awards were presented to Caryn Walker and the Brown School 12.

BELOW: Herman Regan Jr. was recognized with the Lifetime Achievement Award.

Photos by Creative Services

quality, forming a pollution tracking team, launching a tree planting campaign and educating homeowners on protecting and managing their creek banks.

- **Clark’s Run Environmental and Education Corporation, Boyle County**—for coordinating riparian reforestation events near Clark’s Run, creating a recreational trail and educating community residents and local students.
- **Scott R. Smith, Lexington**—Public Service Award—for serving the Commonwealth as executive director of the Office of Regulatory Affairs, chief of staff of the EPPC and acting director of the Environmental Quality Commission.
- **Herman Regan Jr., Frankfort**—Lifetime Achievement Award—for promoting environmental awareness and action through his years of government and private consulting work.



Hargis appointed executive director of EQC

Irala “Jo” Hargis, an environmental scientist and naturalist, was appointed executive director of the Kentucky Environmental Quality Commission (EQC) in April.

“I will continue to support EQC’s mission to serve as a public forum for the exchange of views, concerns and ideas relating to the quality and health of Kentucky’s natural resources,” Hargis said. “I am committed to promoting partnerships that involve the public, advocacy groups and industries that will focus on conserving a healthy environment for future generations.”

Hargis previously worked for R.D. Zande & Associates, the Natural History Educational Co., and 3D/International. She holds a Bachelor of Science in wildlife biology and chemistry from Murray State University.



Students recognized for outstanding achievements in energy education

By Lola Lyle
Office of Energy Policy

Energy is part of everything we do. Just ask the 1,300 Kentucky students who attended Kentucky National Energy Education Development (NEED) workshops this year. Better yet, ask the five student groups who were recognized at the 2005-06 Kentucky NEED Youth Awards Ceremony for Energy Achievement.

Each year Kentucky NEED invites students to submit projects that document how they educated their peers and community about energy. Education and energy professionals judge the projects and select state winners in four categories—primary, elementary, junior and senior level.

Five Kentucky schools were recognized for outstanding energy education projects at the annual awards luncheon in May. Presentations were made by sponsors of the Kentucky NEED Project. Winning schools were awarded plaques, a Kentucky state flag that had been flown over the state Capitol and a certificate from their state representative. This year's participants were from the following schools:

- Eastside Elementary, Cynthiana
- Glenn O. Swing Elementary, Covington
- Letcher Elementary, Letcher County
- Southside Elementary, Cynthiana
- Twenhofel Middle School, Independence

In June, students from Glenn O. Swing Elementary, Letcher Elementary and Twenhofel Middle School were also recognized during the annual National Youth Awards for Energy Achievement in Washington, D.C. This four-day celebration of energy, student leadership and educational excellence recognizes students from across the United States for innovative energy education efforts and allows NEED teams from around the country to come together to share ideas. The Twenhofel NEED Team was honored as the National Junior-Level Rookie of the Year Project, an award given for the most outstanding first-year project. For more information visit <http://www.need.org/YAwards/projects.php>

Governor Ernie Fletcher issued Kentucky's first comprehensive energy strategy in February 2005 (*Kentucky's Energy: Opportunities for our Future*). It contains 54 recommendations to guide the Commonwealth's policy making as it relates to energy. Included in the governor's recommendations is support for funding opportunities to strengthen K-12 energy education. Kentucky NEED works within the state's schools to teach students about energy issues facing the Commonwealth and the nation. A copy of Kentucky's comprehensive energy strategy can be found at www.energy.ky.gov. For information about the Kentucky NEED Project and the NEED Youth Awards for Energy Achievement, contact Kreagor@need.org or (859) 578-0312.



Letcher Elementary students were recognized for outstanding energy education projects at the Kentucky NEED Youth Awards Ceremony for Energy Achievement. Photo by Karen Reagor

Richmond company wins national recycling award

The American Forest & Paper Association (AF&PA) presented Bluegrass Regional Recycling Corp. (BRRC) in Richmond with the 2006 AF&PA Business Leadership Recycling Award in the small business category. The award recognizes an outstanding paper recycling program with fewer than 150 employees.

BRRC is a statewide nonprofit agency dedicated to training and educating the general public and local governments on recycling. The program functions as a cooperative and allows rural communities to recycle materials that otherwise would not have the volume to initiate cost-effective programs. In 2005, BRRC collected more than 18,000 tons of paper for recycling.

Unique to the BRRC program is the use of inmate labor at its processing center and satellite recycling centers. In 1998, BRRC began a career development program that uses recycling materials as a resource for on-the-job training for the inmate workforce. In exchange for their labor, inmates are given training and certifications that often result in job placements upon release.

The AF&PA recycling awards were created to recognize outstanding individual, business, community and school paper recycling efforts. In 2005, a record-high 51.5 percent of the paper consumed in the United States was recovered for recycling. The paper industry has set an ambitious goal of 55 percent recovery by 2012. It is only through the continued efforts of the millions of Americans who recycle at home, work and school that this goal will be achieved.

For more information, visit www.paperrecycles.org. To learn more about the Bluegrass Regional Recycling Corp., visit www.thebrrc.com

Information provided by the American Forest & Paper Association



Bluebird box giveaway a success

By **Connie Gray**
Division of Conservation

The Caldwell County Conservation District has given away more than 300 bluebird boxes in the past six years. The district is interested in Eastern bluebirds because the native songbird population has steadily declined. The current population is less than a fifth of what it was 50 years ago.

The decline can be attributed to several factors but primarily the loss of suitable habitat, along with an invasion of English starlings and house sparrows that compete for the same habitat. However, thanks to citizens and organizations that support and educate about bluebirds, the decline has been halted by the construction and placement of bluebird boxes.

The future holds promise for one of Kentucky's native songbirds simply by providing a wooden box as a nesting site or a series of boxes in one area known as a bluebird trail. When considering the setup

of a bluebird trail, the most important thing to remember is the habitat. The best locations are in open rural or urban areas with scattered trees that have low or sparse ground cover. Pastureland, parks away from heavy human traffic, and mowed areas such as cemeteries and golf courses are all excellent locations for a bluebird trail. The bluebird population has been shown to increase in areas where nesting boxes have been placed along with the suitable environment.

Richard Peters, one of many participants in the bluebird box giveaway, testifies that the bluebird box he received last year already has inhabitants.

"Don't be discouraged if your nesting boxes are not used the first year," Peters said. If bluebirds are not common in your area, it may take one or two seasons for them to find your new box. Nesting boxes are best placed along fence lines, on posts or trees at a height of about five feet or higher from the ground.

The Caldwell County Conservation District has been able to give away these bluebird boxes with funding provided by



Richard Peters and Thelma Blythe, NRCS soil conservation technician, stand in Peters' backyard in Princeton where he has mounted several wooden nesting boxes that show lots of activity by bluebirds and other native songbirds. Photo submitted

the Caldwell County Fiscal Court and help from the students at the Caldwell County High School Agriculture Department. 



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